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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,269	05/08/2006	Andreas Lendlein	26538-0013	6291

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HOGAN LOVELLS US LLP  
IP GROUP, COLUMBIA SQUARE  
555 THIRTEENTH STREET, N.W.  
WASHINGTON, DC 20004

EXAMINER
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CHEA, THORL

ART UNIT	PAPER NUMBER
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1795

NOTIFICATION DATE	DELIVERY MODE
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06/25/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

dcptopatent@hoganlovells.com  
robert.gruwel@hoganlovells.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/541,269	<b>Applicant(s)</b> LENDLEIN ET AL.	
	<b>Examiner</b> Thorl Chea	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-13,18 and 21-28 is/are pending in the application.
- 4a) Of the above claim(s) 12,13 and 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-13 and 21-28 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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### **DETAILED ACTION**

1. This office action is responsive to the communication on March 30, 2010; claims 1, 3-13, 18, 21-28 are pending; claims 12-13, 18 are withdrawn from consideration as being drawn to non-elected invention; claims 2, 14-17, 19-20 have been canceled; claims 22-28 were newly added.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1, 3-13, 21-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claiming of “the amorphous network comprising a matrix component, which is transparent for ultraviolet light and has elastomeric properties, and a cross-linking component able to undergo a reversible reaction upon stimulation with ultraviolet light” is indefinite, i.e. “the claiming of chemical and physical properties is not sufficient where the claims would not particularly define applicant’s invention, but also read on other products. Ex parte Siddiqui 156 USPQ 426 (PO BdPatApp 1966); Ex parte Davisson 133 USPQ 400 (PO BdPatApp 1958) ; Ex parte Fox 128 USPQ 157 (PO BdPatApp 1957) ».

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3-5, 7, 9-11, 21, 28 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Langer et al (US 6,388,043B1).

Langer et al discloses a shape memory composition substantially as claimed. See the multi-block copolymer with hard segment and soft segment in column 10, lines 59-67; The polymer segments includes natural or synthetic, wherein the synthetic polymer blocks or polymer includes polyacrylate (column 7, lines 51-67); a polymer network is prepared by covalently crosslinking macromonomer, i.e., polymer which contain polymerizable endgroups such as carbon-carbon double bond, and the polymerization process can be induced by using light or heat sensitive initiator or by curing with ultraviolet light; and in medical application, the crosslinking is performed using a photo-crosslinker and no chemical initiator in column (column 9, lines 65-65; column 10, lines 1-15); the use of copolymer including methyl acrylate polymeric block as a soft segment in column 8, lines 47-58; and photochemical stimuli having functional group capable of undergoing photo-reversible reaction such as cinnamonic acid derivative and cinnamylidene derivative column in column 11, lines 57-67. Langer discloses a use of a photo-crosslinker in combination with a block polymer to form a shape memory composition wherein the photo-crosslinker is considered as photoreactive component claimed in the claimed invention, and the block polymer is considered as amorphous network since it has

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photo-cross linking function same as defined in the specification disclosure. Therefore, the invention as claimed lacks novelty. Alternatively, it would have been obvious to the worker of ordinary skill in the art at the time the invention was made to form a shape memory composition within the scope taught in Langer et al, and thereby provide a material as claimed.

7. Claims 6, 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Langer et al and Moro et al (US 2005/0118270A10).

The hydroxyethyl acrylate and a cross-linking agent including diacrylate are taught in Moro et al on page 2, [0035] and [0041]. It would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use a known acrylate taught in Moro et al in the invention taught in Langer et al with an expectation of achieving a shape memory polymers since the component taught in Lager et al included an acrylate such as shown in column 7, lines 55-68.

8. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Response to Arguments***

9. Applicant's arguments filed March 30, 2010 have been fully considered but they are not persuasive because of the reason set forth above. Langer et al discloses a shape memory composition has three component as claimed, and the shape memory polymer can be reversible by the action of light energy. See the polymer network that is prepared by covalently cross-linking macromonomer using a cross-linker in column 9, lines 65-67 and column 10, lines 1-13; and the photochemical stimuli in column 10, lines 43-55. Thus, Langer et al discloses the composition as claimed, and the characteristic such as transparent and electrometric limitation

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presented in the claims is inherent to the material taught in Langer et al. See for instance Langer in Fig.3 discloses the use of thermoplastic elastomers which provide an elastometric property to the system, and the use of synthetic polymer black such as acrylate in column 7, lines 55-68 similar to that of the matrix network used in the present invention.

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thorl Chea whose telephone number is (571) 272-1328. The examiner can normally be reached on 9 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571)272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TC/  
June 11, 2010

/Thorl Chea/  
Primary Examiner, Art Unit 1795